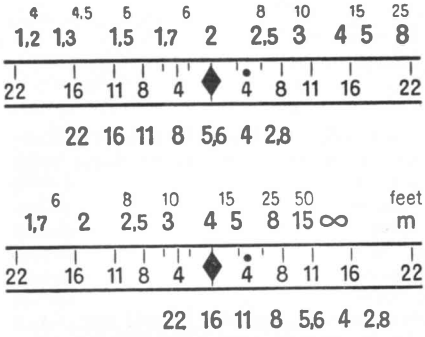
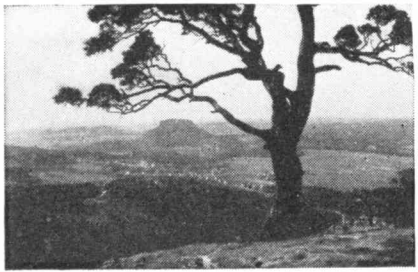




Reading off the depth of field

When the depth of field is great, objects at widely varying distances from the camera will form a sharp image. The precise extent of this sharp zone will be indicated — after focusing — by the depth-of-field scale (6) on the lens: on either side of the red distance-setting mark you can read off from the distance scale where the depth-of-field zone begins and ends for any specific aperture setting. If the relevant f/No. on one side of the central distance-setting mark is in line with the infinity symbol (∞) or even beyond it, then the depth of field will extend right up to infinity. On the left are two examples and a photograph demonstrating large depth of field.

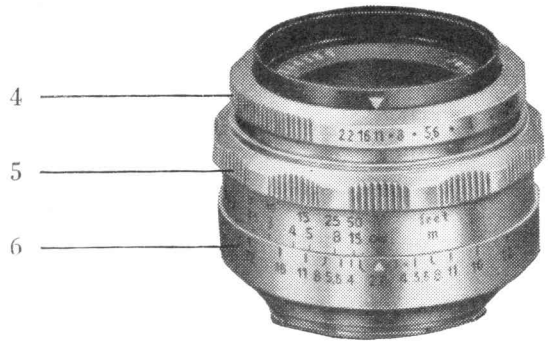
Above: Distance setting 2 metres ($6^1/_2$ ft), aperture f 5.6 = depth of field extends from 1.7 m ($5^1/_2$ ft) to 2.5 m ($8^1/_2$ ft)

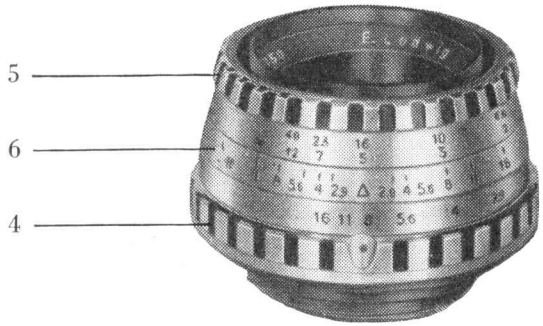
Below: Distance setting 4 metres (13 ft), aperture f 16 = depth of field extends from 2 metres ($6^1/_2$ ft) to infinity (∞)

The Jena Pancolar 2/50 mm lens has an automatic depth-of-field indicator; see page 21.

Click-stop diaphragm on Jena T 2.8/50 and Trioplan 2.9/50 lenses: A gentle click will be felt as the aperture setting ring (4) is turned to each marking on the aperture scale. When the ring is turned to stop-down the lens, you need only count the number of clicks until the diaphragm reaches the previously determined f/No. It is therefore not necessary to remove the camera from your eye.

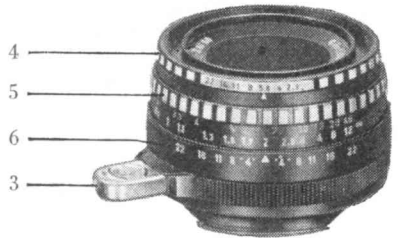
Pre-set diaphragm on Meritar 2.9/50 lens: Press the aperture setting ring (4) back towards the camera body, turn it until the red setting dot is opposite the desired f/No and then let the ring spring forward once again. Open up the diaphragm to its maximum aperture for focusing, and then just before pressing the shutter release — without lowering the camera — turn the aperture setting ring (4) until it comes to a stop at the pre-selected f/No.





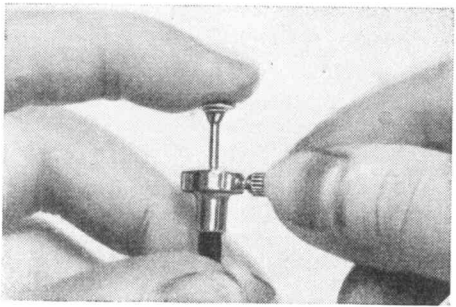
Fully-automatic pressure diaphragm on Domiplan 2.8/50 lens: Always open the diaphragm fully for focusing. Pre-select the required smaller aperture (larger f/No) by turning the aperture setting ring (4); intermediate settings between the marked f/numbers can also be selected. By depressing the release rocker (3), the lens will stop down automatically; when the pressure on the rocker is relaxed, the diaphragm re-opens automatically. The release rocker should therefore be held down until the shutter has closed. To check the depth of field when focusing, the release rocker (3) may be depressed part way so that the diaphragm closes down without releasing the shutter.

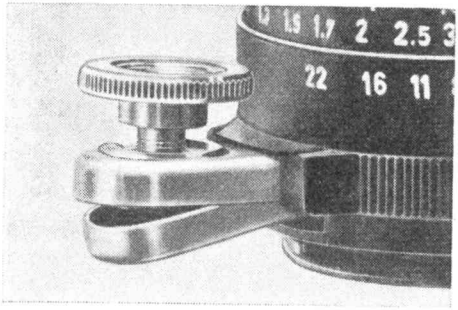
Technique for taking time exposures:



1. Set the shutter to B and screw a cable release with a long plunger and locking device into the release rocker. By locking the plunger in its depressed position, there is no need to hold it down during the exposure period (so avoiding camera shake).

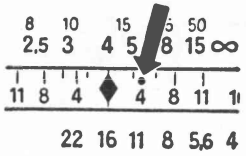
2. Screw the locking knob (available as an accessory) into the release rocker (3), whereupon it will disengage the automatic diaphragm mechanism by holding up the lower part of the rocker. The diaphragm will then remain stopped down to the pre-selected aperture, and the T setting of the shutter can be employed.

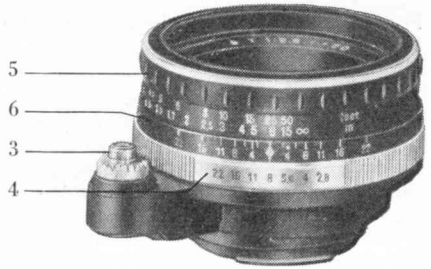




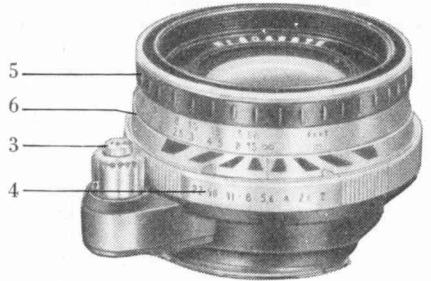
Focusing for infra-red pictures (applicable to all lenses)

When using infra-red film, first focus the reflex image normally then note the distance indicated by the red setting mark (either in feet or metres, or the infinity symbol), and turn the focusing ring to set this distance against the red dot (infra-red setting mark) which is either to the right or left of the normal setting mark. By doing this the image produced by the invisible infra-red rays, which lies at a greater distance from the lens than an image formed by visible light, will be brought into sharp focus in the film plane of the camera and consequently will appear sharp in the negative.



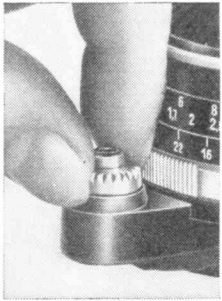


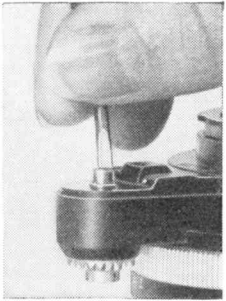
Automatic diaphragm disengaged



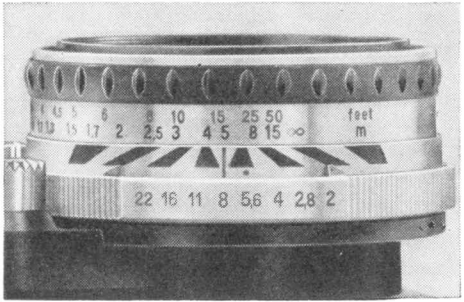
Automatic diaphragm engaged

Fully automatic spring diaphragm on Jena T 2.8/50 and Jena Pancolar 2/50 lenses: Engage the automatic diaphragm mechanism by pushing the release knob (3) on the lens towards the camera together with its mount and turning it to the right (viewed from the front of the camera). To disengage the automatic diaphragm, press the release knob (3) together with its mount towards the camera and turn it to the left (again looking from the front). When the automatic mechanism is disengaged (= manual diaphragm setting), the diaphragm will remain stopped down to the selected f/No (this is important when using slow shutter speeds). When the automatic mechanism is engaged, the diaphragm should be fully opened for focusing. Select the required smaller aperture (larger f/number) by turning the aperture setting ring (4), which can also be set to intermediate stops. By depressing the lens release knob (3) the diaphragm is stopped down automatically; by letting go of the release knob (3) the diaphragm re-opens automatically. Pressure on the release knob (3) should not be relaxed until the shutter has closed.

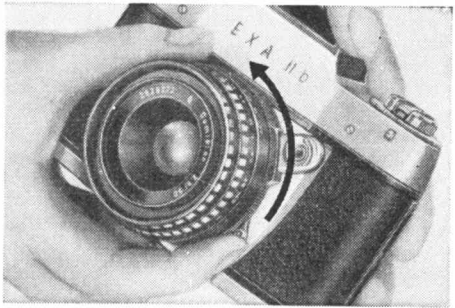




If you want to check the depth of field whilst focusing, depress the lens release knob (3) just far enough to stop down the lens as required without releasing the shutter. In order to ensure that the shutter release knob (17) on the camera body is always depressed far enough to trigger the shutter, the setscrew on the release mechanism of the lens should be adjusted to the required length with a screwdriver. A cable release with a long plunger can be screwed into the lens release knob (3).



Automatic depth-of-field indicator on the Pancolar 2/50 lens: After setting the aperture and distance, follow the appropriate black/white bands from the two red markers to the distance scale, upon which the depth-of-field range can be read off. Example: aperture setting f 8, distance 5 metres (17 feet) = depth of field from barely 3 metres (10 feet) to over 15 metres (actually 23 metres or 76 feet).



3. Changing the lens (1): depress the locking lever (18) towards the lens, then turn the lens to the left until the two red dots (2 and 7) are in line, and lift the lens out towards the front. To insert a lens proceed in the reverse sequence: line up the red dots, and turn the lens to the right until it locks. All special-purpose lenses can be used, with focal lengths ranging from the shortest to the longest.

Special-purpose lenses for the EXA IIb

Designation, speed and focal length in mm	Type of aperture *)	Angle of view (horizontal)	Front mount for screw-in and push-on accessories
Flektogon 4/20	FSD	93°	M 77×0.75, 80 mm ⌀
Flektogon 4/25	FSD	82°	M 77×0.75, 80 mm ⌀
Lydith 3.5/30	PSD	71°	M 49×0.75, 51 mm ⌀
Flektogon 2.8/35**	FSD	62°	M 49×0.75, 51 mm ⌀
Jena B 1.5/75	PSD	32°	M 58×0.75, 60 mm ⌀
Jena Bm 2.8/80	FSD	30°	M 49×0.75, 51 mm ⌀
Trioplan N 2.8/100	PD	25°	M 55×0.75, 57 mm ⌀
Jena Bm 2.8/120	FSD	21.5°	M 67×0.75, 70 mm ⌀
Primotar 3.5/135	PSD	18°	M 55×0.75, 57 mm ⌀
Jena S 4/135**	FSD	18.5°	M 49×0.75, 51 mm ⌀
Jena S 2.8/180	FSD	14°	M 86×1, 90 mm ⌀
Orestegor 4/300	PSD	12°	M 58×0.75, 60 mm ⌀
Jena S 4/300	PSD	8°	M 77×0.75, 80 mm ⌀
Tele-Megor 4.5/300	PSD	8°	M 82×0.75, 85 mm ⌀
Tele-Megor 5.5/400	PSD	6°	M 82×0.75, 85 mm ⌀
Jena Catoptric (mirror) lens 4/500	no diaphragm	5°	Built-in filter turret
Jena Catoptric (mirror) lens 5.6/1000		2.5°	

* PSD = Pre-set diaphragm; PD = Fully-automatic pressure diaphragm; FSD = Fully-automatic spring diaphragm

** with extra-long helical thread for close-up focusing without special accessories, with Flektogon 2.8/35 down to 6 3/4 inches, and with Jena S 4/135 down to 40 inches.

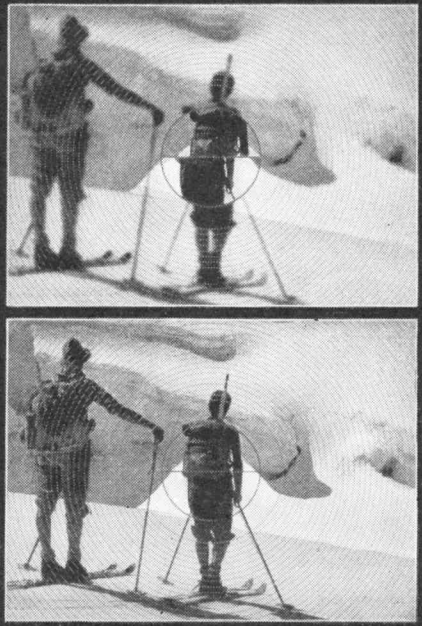
Using the penta-prism viewfinder

For normal vertical and horizontal pictures it is generally most convenient to hold the EXA IIb in your right hand and to focus with the right thumb and forefinger. The left hand provides additional support for the camera whilst the left-hand forefinger releases the shutter. Users with defective eyesight should use their distance glasses for focusing in the prism viewfinder.

When taking horizontal (landscape-format) pictures, the camera can also be held upside down: the back of the EXA IIb is then pressed against the forehead to guard against camera shake.

Fresnel Lens with split-image rangefinder

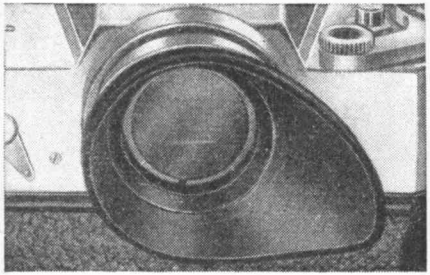
When using the EXA IIb with a fresnel lens viewfinder, the ground-glass ring is generally used for reflex focusing since this does not contain the line structure visible in the rest of the viewfinder field. In the middle of the field is a split-image rangefinder for doubling the accuracy of focusing. When the image is correctly focused, the two semi-circular half images in the round rangefinder field will be correctly aligned alongside or above and below each other, with no trace of displacement. Focusing should not be performed at a smaller aperture (larger f/number) then 5.6, since otherwise one half of the rangefinder field will appear dark. The eye used for viewing must be held accurately in the centre of the viewfinder eyepiece; looking into the finder at an angle will lead to incorrect focusing and unsharp pictures.

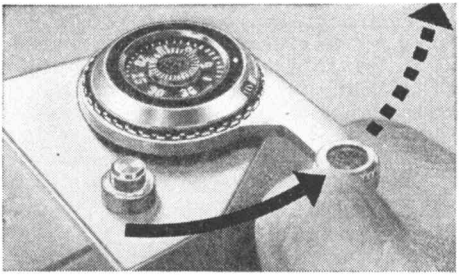


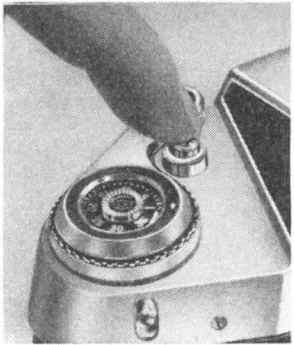
The eyepiece cup is an indispensable accessory which is fitted over the eyepiece (19) of the prism viewfinder to keep out distracting straylight. It can also be used by spectacle-wearers, since corrective lenses can be inserted by your optician in its mount; it will then be possible to focus without wearing glasses.

Changing the film

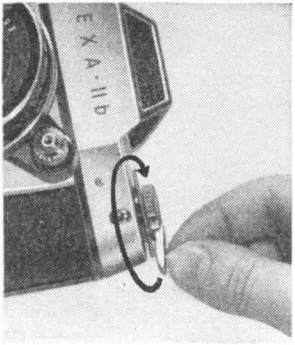
When using a take-up spool it may be possible to take one or two more exposures after the 36th frame before the film cannot be wound on any further. It may also happen that the rapidwind lever (11) sticks before it can be swungright up to its stop. The film should then be rewound.



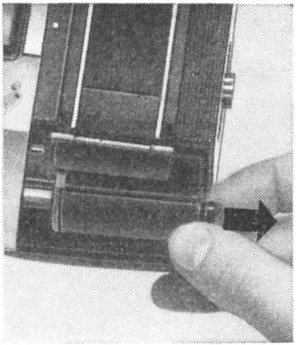




1. Depress the rewind declutching button (10) into its mount. It will stay in this position, but will spring back the next time the shutter is tensioned.



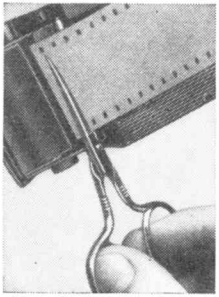
2. Swing out the rewind crank (14) and turn it in the direction of the arrow until you feel that it is turning more easily; the film will then be rewound. If the rapid-wind lever (11) has previously come to a halt in mid-trael, it should now be swung right up to its stop and released.

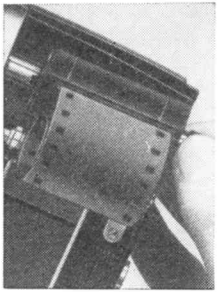


3. Remove the camera back (29) and lift the cassette containing the exposed film out of the film chamber (21).

Take-up spool

When using a take-up cassette, expose one more frame after the 36th exposure, taking care not to photograph anything of importance on it. Then operate the rapid-wind lever (11) to wind the 36th frame right inside the cassette. Remove the back and cut or tear off the film. Take the full take-up cassette out of the take-up chamber (28) and wind the end of the film right inside the cassette.

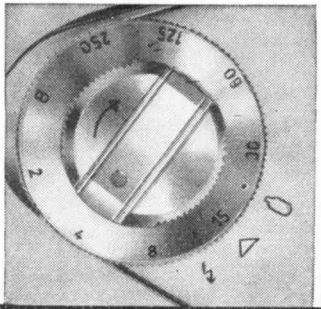


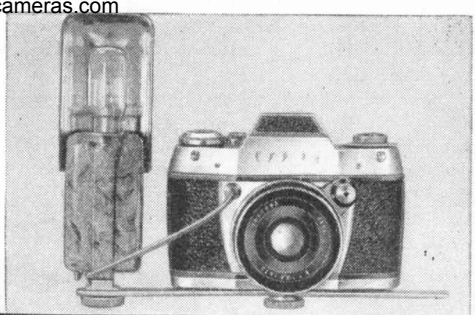


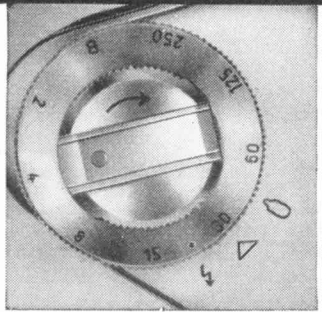
Flash pictures

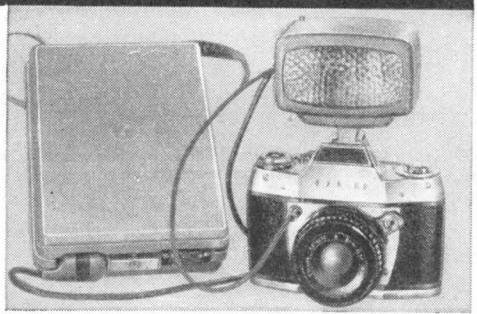
When using flashbulbs, turn the shutter-speed setting ring (16) so that the red dot points to the flashbulb signal ( ). The shutter will then be set to $^1/_{15}$ second. Plug the flashgun cable into the flash contact socket (8), first tensioning the shutter.

When using an electronic flash unit, turn the shutter-speed setting ring (16) so that the red dot points to the electronic flash symbol ( ). The shutter will now be set to $^1/_{30}$ sec. When using electronic flashguns without storage capacitors intended solely for mains operation, the shutter must however be set to $^1/_{8}$ sec. Plug the cable of the flash unit into the flash contact socket (8), first tensioning the shutter.









The following European flashbulbs are suitable for use with the **EXA IIb:**

Osram/GEC Vakublitz bulbs			Philips Photoflux flashbulbs		
Type	Guide No. for 17 DIN (40 ASA)*	Flash duration (approx. exposure time)	Type	Guide No. for 17 DIN (40 ASA*)	Flash duration (approx. exposure time)
XM 1	100	1/100 sec	PF 1	100	$^1/_{100}$ sec
XM 5	166	1/80 sec	PF 5	166	$^1/_{80}$ sec
			PF 24	110	$^1/_{40}$ sec
			PF 60	300	$^1/_{60}$ sec
			PF 100	384	$^1/_{45}$ sec

* **These guide numbers are for black-and-white films only, and are for use with distances measured in feet.**

If a flashbulb should fail to fire e. g. because of poor contact with the flashholder, remove the bulb from the flashgun after the shutter has run off. Do not insert a new flashbulb until the shutter has been re-tensioned.

Care of the camera and lenses

Always keep the camera in its ever-ready case with the lens (or lens cap) in position; alternatively keep it wrapped in a fluff-free cloth.
All parts easily accessible from the outside should be kept clean and dusted with a soft brush; this applies particularly to the film track, including the film guide runners (24), the film guide roller (23), the transport sprocket (26), the film chambers (21 and 28), and also the camera back (29) and pressure plate. The reflex mirror should only be dusted when absolutely necessary, using a very soft brush without applying pressure; do not allow the brush to touch the lightly-greased metal mount of the mirror. Protect the camera against damp, dust and wind-borne sand, etc. Never touch the glass surfaces of the lenses, the viewfinder eyepiece (19) or the mirror with your fingers. The lenses and viewfinder eyepiece (19) should only be cleaned when necessary, using a very soft piece of linen. It is most inadvisable to attempt to interfere with the mechanism of the camera; repairs should be undertaken solely by authorised servicing agencies.

Accessories

Ever-ready case

Lens hood with screw-in mount

Giant release knob for enlarging the shutter release

Polarizing filter

Accessory shoe

Two-in-one bayonet ring for close-ups

Bayonet rings and extension tubes for close-ups (1)

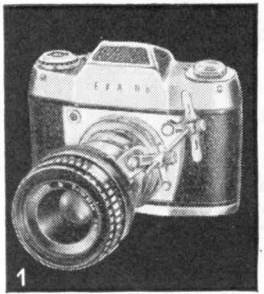
Autocouple extension release for close-ups (1 and 2)

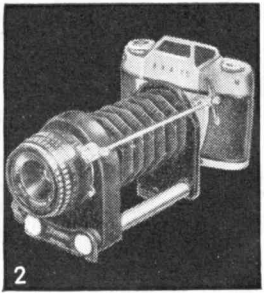
Miniature Bellows Attachment (2)

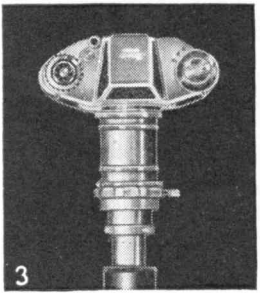
Microscope adaptor (3)

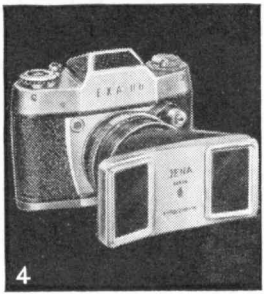
Stereo Attachment (4)

Ihagee "Vielzweck" (multi-purpose) device for close-up photography, copying, photomicrography, etc.









We will gladly send you special leaflets free of charge, and invite you to write and let us know what are your special fields of interest.

We also recommend the following technical manual:

"Foto-Exkursionen mit der EXA", by Werner Wurst (VEB Fachbuchverlag Leipzig).

The illustrations in this manual may differ in certain details from the actual appearance of the camera and its accessories.

IHAGEE KAMERAWERK AG i.V. · DRESDEN A 16

1964

Form 899/7/6411/**Engl.** Made in German Democratic Republic Ag 91/70/021/64 III 9-5 1164 7